



# Memorandum

**TO:** HONORABLE MAYOR AND  
CITY COUNCIL

**FROM:** John Stufflebean  
Peter Jensen

**SUBJECT:** SEE BELOW

**DATE:** May 23, 2007

Approved /s/

Date 05/23/07

## **SUBJECT ENERGY SAVINGS INFORMATION FOR MUNICIPAL OPERATIONS**

### **BACKGROUND**

At the May 14, 2007 study session on the Environmental and Utility Services City Service Area, Environmental Services Department Director John Stufflebean noted a performance measurement data update on page VII-146 in the 2007-08 Proposed Operating Budget. Measure C.1: "Percent of energy conserved in City facilities" should be 20% for the 2006-07 estimate, rather than 16%. Mayor Reed subsequently asked how much money has been saved due to energy conservation and efficiency projects in the City.

### **ANALYSIS**

The City's Strategic Energy Policy has resulted in the implementation of a multitude of actions in the area of energy management for City facilities since its adoption by the Council in April 2001. The program focuses on electric utility conservation, energy efficiency, and use of renewable power for generation. The Mayor and Council set an initial energy savings target of 10% and subsequently elevated it to 12%. City staff initiated adjustments and improvements to facility systems, as well as developed and delivered an energy education program, in order to meet the conservation objectives. Many of these measures and efforts were identified as a result of discussions and suggestions from an ongoing interdepartmental energy committee comprised of key facility staff and users. Implementation of energy savings measures have now elevated the City's savings percentage to **20.1%** as compared to the FY 00-01 baseline. This has resulted in energy savings of over **\$20 million** since 2001. Samples of citywide projects implemented to date are listed in Attachment A.

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As a result of implementing these and other projects, energy consumption has been reduced considerably even while the City's building inventory has grown by nearly 46%. Key accomplishments include:

- The Water Pollution Control Facility, user of over half of the City's energy, has reduced energy use by 31% since 1999.
- New City Hall is 25.7% more energy efficient per square foot than the old City Hall, exceeding California Title 24 building energy standards by 27.4% and reducing the annual energy costs by \$190,000.
- All of the City's Traffic Signals have been converted to LED (light emitting diode) with a projected annual energy cost avoidance of over \$1.6M.
- An estimated 124,000 metric tons of CO2 emissions have been reduced as a result of energy efficiency projects at City facilities—the equivalent of 27,000 passenger cars not being driven for one year.
- The City continues the collaboration with PG&E for the Silicon Valley Energy Watch Program, providing educational programs for the community. This program was funded by PG&E in the amount of \$553,250, for a period beginning July 1, 2006 through June 30, 2009.

More detailed information is available in the City's 2007-08 Energy Action Plan, which was accepted by Council at its March 20, 2007 meeting as part of the Transportation and Environment Committee report.

/s/

John Stufflebean  
Director  
Environmental Services

/s/

Peter Jensen  
Director  
General Services

## **ATTACHMENT A: Citywide Projects Implemented**

### **Educational Efforts**

- Installation of educational energy conservation signage.
- Citywide education to power down non-essential equipment.
- Publication of educational and recognition Cityline articles.
- Organization of Citywide energy events and workshops for staff, residents, and commercial entities.

### **Planning and Design Efforts**

- Development of new building design criteria and design assistance to exceed Title 24 energy standards.
- Comprehensive energy audit of 24 City facilities by an energy engineering consultant to identify further conservation and efficiency measures.
- Partnership with PG&E on energy saving projects including "Savings by Design".

### **Lighting Projects**

- Disconnection of lighting ballasts in fixtures while maintaining Illuminating Engineering Society (IES) standards.
- Lighting system upgrades to various facilities to more efficient fixtures (T8, electronic ballasts, compact fluorescent lamps).
- Powering down some outdoor / aesthetic lighting.

### **HVAC Projects**

- HVAC system adjustments (heating and cooling setpoints, operating hours).
- HVAC system improvements (controls and software programming).
- Retrofit of mechanical / electrical systems through the installation of variable frequency drives.
- Distribution of personal thermometers to each employee in HVAC adjusted facilities.

### **Major Projects at the Water Pollution Control Facility**

- Implementation of energy saving equipment such as fine bubble diffusers at the Plant.
- Use of landfill gas to generate power at the Plant and reduce electricity consumption.
- Operational and schedule adjustments within the Water Pollution Control Plant (Plant).

### **Other Building and Equipment Projects**

- Cool roof installation at three city facilities.
- Glazing replacements and film installation to reduce energy loss and/or need for additional heating or cooling.
- Insulation installation.

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- Appliance and equipment replacement with Energy Star rating devices.
- Use of energy conserving software technology for PC monitors and CPUs.
- Powering down some escalators and exterior fountains.
- Support for Citywide solar energy installation projects where possible (Alum Rock Youth Center in place).